

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0129534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROBLEMS ARISING IN THE STATISTICAL ANALYSIS OF THE RESULTS OF CREEP TESTS ARE DISCUSSED WITH SPECIAL REF. TO THE CASE OF AL ALLOYS. THE DISTRIBUTION OF CREEP STRENGTH IN SERIES OF SUCH SAMPLES OBEYS NORMAL STATISTICAL LAW IF DUE ALLOWANCE IS MADE FOR THE UPPER AND LOWER THRESHOLDS OF SENSITIVITY. WITHIN CERTAIN LIMITS, HOWEVER, THE STATISTICAL ANALYSIS OF SUCH TESTS MAY BE CARRIED OUT ON THE BASIS OF A NORMAL LAW WITHOUT TAKING THESE THRESHOLD VALUES INTO CONSIDERATION. THE ERRORS INVOLVED IN THIS SIMPLIFICATION ARE CONSIDERED.

UNCLASSIFIED

USSR

BORODIN, P. M.

"Kinematic Relativism in Nuclear Magnetic Resonance"

Leningrad, Yadernyy Magnitnyy Rezonans, No 4, 1971, pp 5-17

Abstract: Kinematic relativism may have an appreciable effect on certain parameters of an observed nuclear magnetic resonance signal, and it should be taken into account in all cases where nuclear magnetic resonance is observed in liquids. A proper understanding of the physical mechanism of this effect will also help in practical applications. With this in mind, the author presents a brief survey of the literature on kinematic relativism in connection with various methods of observing nuclear magnetic resonance. Particular attention is given to the strong influence of kinematic relativism accompanying various methods of observing nuclear magnetic resonance in the Earth's magnetic field. It is noted that since the observed effect is due to interaction of precessing magnetic dipoles of elementary particles with external magnetic fields, it should show up in other forms of magnetic resonance, such as electron paramagnetic resonance. Four figures, bibliography of twelve titles.

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1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--USE OF THE NUCLEAR MAGNETIC RESONANCE OF PHOSPHORUS TO STUDY
EXTRACTION BY ORGANOPHOSPHORUS COMPOUNDS. I. EFFECT OF SOLVATION -U-
AUTHOR--(05)--ROZEN, A.M., BORODIN, P.M., NIKOLOTOVA, Z.I., CHIZHIK, V.I.,
SVENTITSKIY, YE.N.
COUNTRY OF INFO--USSR

B

SOURCE--RADIOKHIMIYA 1970, 12(1), 69-76

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--PHOSPHORUS ISOTOPE, ORGANIC PHOSPHATE, URANIUM COMPOUND,
NUCLEAR MAGNETIC RESONANCE, SPIN LATTICE RELAXATION, SOLVENT EXTRACTION,
SOLVENT ACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1464

STEP NO--UR/0186/70/012/001/0069/0076

CIRC ACCESSION NO--AP0135135

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135135

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRIME31 P CHEM. SHIFT DELTA OF BU SUB3 PO SUB4 (TBP), CH SUB3(C SUB5 H SUB11 O)SUB2 PO (DAMP) AND A TRIOCTYLPHOSPHINE OXIDE (TOPO) SOLN. IN CCL SUB4 ARE PLUS 6.3, MINUS 23.3, AND MINUS 38.0 PPM, RESP.; THE PRIME31 P CHEM. SHIFTS OF SOLVATES (DELTA SUB01) PREPD. BY SATN. OF THE ABOVE EXTRACTANTS WITH UO SUB2(NO SUB3)SUB2 ARE PLUS 4.3, MINUS 32.1, AND MINUS 63.8 PPM, RESP. THE SOLVATION SHIFT (DELTA DELTA EQUALS DELTA DELTA SUB0) WAS A LINEAR FUNCTION OF THE NO. OF ESTER GROUPS (R0), AND THE LOG. OF THE EXTN. CONST. (LOG K) INCREASED LINEARLY WITH INCREASING DELTA DELTA, I.E. DELTA DELTA COULD BE USED AS A MEASURE OF THE EXTG. POWER OF ORG. P COMPOS. THE CHEM. SHIFTS ASSOC'D. WITH THE DILN. OF THE ABOVE EXTRACTANTS (AND SOLVATES) WITH DECANE, CCL SUB4, BENZENE AND CHCL SUB3 DID NOT EXCEED 1-3 PPM. THE SPIN LATTICE RELAXATION TIMES (T SUB1) OF 5.3 0.85, AND 0.33 SEC, RESP.; DILN. OF THESE EXTRACTANTS (OR SOLVATES) WITH CCL SUB4 AND CHCL SUB3 INCREASED THE T SUB1, INDICATING THE OCCURRENCE OF INTERACTION ON THE DILN.

UNCLASSIFIED

USSR

UDC 621.316.1.072.8.016.25.076.12

BORODIN, P. P.

"Experience in Studying Some Operating Parameters of Electric Power Networks"

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Electric Power Supply of the Cities — collection of works), Leningrad, Energiya Press, 1970, pp 27-30 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 295)

Translation: A study was made of the load conditions of municipal electric power networks operating at voltages up to 1,000 volts. A quantitative estimate of the active power loss reduction in the presence of reactive power compensation is presented, and the savings as a result of reducing losses are compared with the expenditures on compensation. There is 1 illustration, 1 table and a 1-entry bibliography.

1/1

USSR

UDC 547.831.3

LUGOVIK, B. A., YUDIN, I. G., BORODIN, P. V., VINOGRADOVA, S. M., and
KOST, A. N., Moscow State University Imeni M. V. Lomonosov

"Reactions of 1,2-Dihydroquinolines. III. Addition of Benzene and Phenyl
Halides to the Double Bond of 2,2,4-Trimethyl-1,2-dihydroquinolines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 795-797

Abstract: 2,2,4-Trimethyl-1,2-dihydroquinoline (I) does not react with benzene at room temperature, even with excess $AlCl_3$. When heated it yields products of di- and polymerization. On the other hand the hydrochloride or N-acetyl derivative of (I) adds benzene at room temperature. When $AlCl_3$ is replaced by iron or zinc chloride or by strong mineral acids, the reaction does not take place at all. Solvents which are capable of forming stable complexes with $AlCl_3$ -- such as diethyl ether, nitromethane, dibutyl ether, or nitrobenzene -- hinder the reaction. Substituting a benzyl group in position 1 or a methyl group into the aryl ring has practically no effect on the reaction, while the presence of a methoxy group in position 6 hinders the process considerably. Hence, addition of benzene to (I) requires a preliminary protonation or acylation of the amino group. Phenyl halides react under drastic conditions yielding only para-substituted 4-aryl-2,2,4-trimethyl-1,2,3,4-tetrahydroquinolines.

- USSR

LUGOVIK, B. A., BORODIN, P. V., YUDIN, L. G., KOST, A. N., Chemistry Department, Moscow University

"A Method for Preparing Substituted 1,2,3,4-Tetrahydroquinolines"

USSR Author's Certificate No 253067, class 12p, 1/10 (C 07 d),
filed 17 July 68, published 24 Feb 70 (from RZh-Khimiya, No 21 (II),
10 Nov 70, Abstract N579 by I. A. Mel'nikova)

Translation: These compounds, intermediate products for the synthesis of repellents, are prepared by treating substituted 1,2-dihydroquinoline hydrochloride with a mixture of aliphatic or alicyclic hydrocarbons in the presence of $AlCl_3$; 78 g of anhydrous $AlCl_3$ is added to a suspension of 70 g of 2,2,4-trimethyl-1,2-dihydroquinoline hydrochloride in 120 ml of n-heptane. The mixture is stirred for 30 min at 66-70°, decanted, and the tarry residue treated with 60 g of NaOH solution in 400 ml of ice water and extracted with 150 ml of ether. The organic layer is washed with water, dried with KOH, and fractionated, forming (i) 26 g of 2,2,4-trimethyl-1,2,3,4-tetrahydroquinoline, yield 44.3%, boil. point 177

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LUGOVIK, B. A., et al, USSR Author's Certificate No 253067, class 12b, 1/10 (C 07 d), filed 17 July 68, published 24 Feb 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract N579 by I. A. Mel'nikova)

83-6°/2, melting point 41° (from heptane) and (ii) a fraction with a boiling point of 130-50°/2 which is dissolved in the excess n-heptane, treated with 15% HCl, filtered, the mother liquor alkalized with 10% KOH solution, extracted with ether, the organic layer washed with water, and dried with KOH, forming 6.8 g of 2,2,4-trimethyl-7-heptyl-1,2,3,4-tetrahydroquinoline, yield 6.3%, boiling point 125-30°/2. The following are prepared in a similar fashion (the compounds, yield in %, boiling point in °C are given): 2,2,4-trimethyl-1,2,3,4-tetrahydroquinoline, 50, 83-5/2; 2,2,4-trimethyl-7-cyclohexyl-1,2,3,4-tetrahydroquinoline, 13, 144-6/2; n₂₀D 1.5394, d₄²⁰ 0.9638.

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USSR

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UDC 621.375.126:621.375.4(088.8)

BORODIN, V. K.

"A High-Frequency Amplifier"

USSR Author's Certificate No 254573, Filed 25 Jun 68, Published 11 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D51 P)

Translation: An amplifier is proposed with low-voltage power supply. The unit is based on a transistor with a tank circuit in the collector circuit. To improve the stability of the parameters while simultaneously increasing reliability and economy, and also to reduce noises, the collector and base of the transistor are shorted with respect to direct current. Resume.

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USSR

UDC 533.9.082.5

BORODIN, V. S., GEBEKOV, V. D., GINDINA, V. F., KAGAN, Yu. M.

"Diagnostics of the Plasma of a Pulse Discharge in Hydrogen,
Part II"

Leningrad, Optika i Spektroskopiya, No 1, Jan 72, pp 17-21

Abstract: As indicated in the title, this article is the second part of a paper begun in volume 51, 1971, p 525. The first part dealt with the theory of plasma diagnostics; the present half is concerned with the experimental verification of the theoretical conclusions derived. For these experiments, the authors used a pulse discharge in a chamber made of 4-cm thick plexiglass, measuring 20 cm on a side, the chamber being cubic in shape. The electrodes were tungsten rings with an inner diameter of 0.7 cm, placed 1.2 cm apart in the chamber. Quartz windows were set in both sides of the chamber for the purposes of observation. The hydrogen filling the chamber had a pressure of 400-760 mm Hg, and

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BORODIN, V. S. et al, Cotika i Spektroskopiya, No 1, Jan 72,
pp 17-21

the discharge in the chamber was made with a capacitor of 72 μ F charged from a rectifier. Diagrams of the equipment are given, as well as pulse-shape photographs. A table of electron concentrations measured in accordance with a method described in the first half of the article is provided.

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USSR

UDC 681.332.65

SAN'KO, V. S., BORODIN, V. S., and KATKOVA, L. V.

"Device for Comparing Binary Numbers"

USSR Author's Certificate No 264776, filed 21 Oct 68, published 17 Jun 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6,
Jun 71, Abstract No 6B217P)

Translation: The proposed invention belongs to the devices of digital automation and computer engineering in which transmission and conversion of sequential code groups of binary numbers, in decending bit order, are carried out. A circuit for determining the larger of two binary numbers made of magnetic elements with a rectangular hysteresis loop is well-known. This circuit permits determination of the larger of two numbers coming to its inputs. The circuit contains six magnetic elements with a rectangular hysteresis loop. The purpose of the present invention is expansion of the possibilities of this system. The essence of the invention consists in series connection of the exclusion circuit and the selective switching circuit and also creation of an auxiliary output, as a result of which the proposed circuit performs three operations instead of two. In the circuit 1/2

USSR

SAN'KO, V. S., et al., USSR Author's Certificate No 264776, filed 21 Oct 68, published 17 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6B217P)

of the proposed device the bit-by-bit number comparison principle is used. The larger number turns out to be the one for which there is a "1" in one of the high-order bits at the same time as there is a "0" in the second number. If in one of the numbers the highest-order bit is "1." then this number is larger than the other. For identical symbols in the first or several high-order bits the larger number turns out to be the one for which on sequential inspection, beginning with the high-order bits (left to right), there turns out to be a "1" in the same bit and a "0" in the other bit. From what has been stated it follows that the process of determining the larger of two numbers with a bit-by-bit comparison can begin only at the time of occurrence of different symbols in one of the high-order bits (when going from left to right). This bit can be called the "decision" bit. The time required to determine the larger number depends on the location of the "decision" bit for a given number of bits of the compared numbers.

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USSR

UDC 533.9

BORODIN, V. S., GEREKOV, V. D., and KAGAN, Yu. M.

"Diagnosis of a Plasma With Pulse Discharges in Hydrogen"

Leningrad, Optika i Spektroskopiya, Vol 31, No 4, 1971, pp 525-528

Abstract: This is the first of a series of articles. In this particular installment, the question of determining the electron concentration in a plasma is examined by considering pulse discharges in hydrogen. The assumption is made that the plasma is in a state of local thermodynamic equilibrium so that a set of three equations for the electron, ion, and atom concentrations in the normal state; for the pressure of the gas; and for the intensity of the hydrogen line applicable for such a state can be used. The further assumption is made that the pressure of the hydrogen is constant and that the plasma is quasi-neutral, thus assuming that the electron and ion concentrations are equal. Formulas are developed for the intensity distribution of the hydrogen line as a function of time, and an expression is found through which the initial electron concentration can be found simply by measuring the relative course of the intensity at the center of the line and the half-width averaged over the time interval.
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USSR

BORODIN, V. V., KOZOKINA, S. M., KONOVALOVA, V. V., MAYOROVA, V. A.

"Algorithm for Lexicographic Processing of Texts"

Izbr. Tr. Vses. Mezhvuz. Simpoz po Prikl. Mat. i Kibernet., Gor'kiy, 1967
[Selected Works of All-Union Interuniversity Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 359-365 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V770, by the authors).

Translation: Problems of organization of a machine dictionary capable of performing a broad range of linguistic tasks is studied. It is suggested that the dictionary be based on list structures using the apparatus of grammars with a finite number of states. It is considered that the most acceptable form of operation with an automatic dictionary is the method of standard programs. With this purpose in mind, a set of operators is given for writing the program. The most typical tasks of lexicographic analysis performed by computers are formulated in terms of the operators.

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USSR

UDC 681.3.06.51

BORODIN, V. V., MAYOROVA, V. A., SHUL'TS, M. M.

"General Structure of "Kompas" Series Information Retrieval Systems"

Nauchno-teckn. Inform. Sb. Vses. In-t. Nauchn. i Tekhn. Inform. [Scientific-Technical Information. Collection of All-Union Institute for Scientific and Technical Information], Series 2, No. 9, 1970, pp 25-31 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V647 by the authors).

This article is the first of a series of articles dedicated to descriptor information retrieval systems with positional coding. The article studies problems of the general structure of an information retrieval system in the "KOMPAS" series, developed at the scientific research institute for applied mathematics and cybernetics (NIIPMK). The general structure refers to the formal model and language of representations. The formal model of the information retrieval system based on the language of the theory of multiply coupled mappings is presented in detail. A representation of IRS by computers based on the operative method of programming and the method of construction of concrete IRS of the "KOMPAS" series are presented.

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USSR

UDC [537.226+537.311.33]:[537+535]

GAKH, S. G., BORODIN, V. Z., and KRAMAROV, O. P.

"Influence of High-Temperature Polarization on Pyroelectric Effect and Electrical Properties of Barium Titanate"

Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronic Engineering: Collection of Scientific and Technical Works on Materials), 1970, vyp. 8, pp 92-96 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE611 from summary)

Translation: The authors studied the possibilities of improving the stability of the pyroelectric properties of BaTiO_3 single crystals by selecting the appropriate polarization mode. Preliminary data are presented on the influence of high-temperature polarization on the magnitude and stability of the pyroelectric effect in BaTiO_3 single crystals.

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USSR

BORODIN, V. Z., KUZNETSOV, V. G.

UDC 621.317.3

"Procedure for Determining the Coercive Force of a Photoelectric Field"

Elektron. tekhnika. Nauchno-tehn. sb. Materialy (Electronic Engineering. Scientific and Technical Collection. Materials), 1970, vyp. 6, pp 109-125 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A304)

Translation: The operation of an ordinary oscillographic circuit is analyzed considering nonlinearity of the ferroelectric capacitor. The conditions of undistorted reproduction of the dielectric hysteresis loop, the current oscillogram and reversible characteristics are proposed. The dispersion of the coercive force of BaTiO_3 crystals in the infrasound frequency range was studied experimentally. The conclusion is drawn of variation of the mechanism of the repolarization process of BaTiO_3 crystals in the indicated frequency band.

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USSR

UDC: 681.325.65-525

CHAPLYGIN, E. I., TROSHKIN, A. K., SHMELEV, L. F., ~~BORODIN, Yu. F.~~
SYCHEV, Ye. A., GLYZIN, A. N., CHERNYSHEVA, M. A. ~~SYCHEV, Ye. A.~~
Volga Affiliate of the All-Union Scientific Research Institute of Abrasives
and Grinding

"An OR-NOR Fluidic Element"

Moscow, Otkrytiya, izobrateniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 33, Soviet Patent No 285341, class 42, filed 14 Jul 69, published
29 Oct 70, pp 118-119

Translation: This Author's Certificate introduces an OR-NOR fluidic element which contains supply, control, and output channels; a jet interaction chamber; and also channels which are open to the atmosphere. As a distinguishing feature of the patent, the device is designed for improved stability of the characteristics of the element. The unit contains an added projection on the wall opposite the control channels preceding the corresponding channel which is open to the atmosphere, and also an additional chamber made in this channel which is open to the atmosphere and located immediately behind the projection.

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USSR

UDC 51

BERDICHEVSKIY, V. V., BORODIN, YU. M., KRIVOV, F. F., PELIPEY, L. N.

"Computer Algorithms for Obtaining the Summary Materials List"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,
pp 130-137 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V395)

No abstract

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USSR

UDC 535.576

BORODIN, YU.P., BORONIN, V.G., KAREV, YU.A., KRUGLOV, I.I., MIKHAYLOV, L.I., PAVLOVA, V.A., PETROV, V.S., RYZHIKOV, I.V.

"Study Of The Region Of Radiative Recombination In Electroluminescent Structures Based On Diffusion And Epitaxial Specimens Of Gallium Arsenide"

V sb. Elektrolyuminatsentsiya tverd. tel. (Electroluminescence Of Solid Bodies--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 54-58 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 118363)

Translation: A comprehensive study is presented of the electrical and optical properties of the region of radiation recombination in diffused and epitaxial specimens. The distribution is obtained of the impurity in the p-region of diffused and epitaxial specimens by means of a measurement of the photoluminescent spectra. The experimentally determined transition time is: up to 1000 nanosecond with epitaxial specimens and 50 nanosec with diffused. The external quantum efficiency at $T = 300^{\circ}$ K of the diffused and epitaxial specimens equals one percent and five percent, respectively, and for a construction with the maximum possible external quantum efficiency ~ 9 percent. 6 ill. 5 ref. Summary.

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USSR

UDC 576.851.49.095.13:[628.31:634.0.863]

GORODINA, G. A., MIRONOVA, L. A., Irkutsk Medical Institute and Irkutsk Scientific Research Institute of Epidemiology and Microbiology

"Effect of the Waste Water of the Hydrolysis Plant on the Survival of Typhoid and Dysentery Bacteria"

Moscow, Gigiiena i Sanitariya, No 8, 1972, pp 101-102

Abstract: A study was made of the effect of hydrolysis waste water on the pathogens of typhoid and dysentery. The survival of typhoid and dysentery bacteria in the waste water was studied experimentally in order more precisely to define the bacterial properties of the common hydrolysis waste with respect to these microorganisms. The waste water of the Tulun Hydrolysis Plant was studied because it had not been decontaminated after passage through the cleaning structures. Fifteen series of experiments demonstrated that the survival of typhoid bacteria after 2, 4 and 24 hours is quite high for all dilutions of the water. Thus, the number of microbial colonies in the test tube with undiluted waste water by comparison with the control at 22°C decreased by 307 on exposure for 2 hours, 337 on exposure for 4 hours and 555 on exposure for 24 hours. Consequently, the bacterial properties of the Tulun Hydrolysis Plant waste are unacceptable with respect to such pathogenic microorganisms. The 1/2

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BORODINA, G. A. and MIRONOVA, L. A., Gigiyena i Sanitariya, No 8, 1972, pp 101-102

residual number of colonies of dysentery bacteria in all dilutions after 2, 4 and 24 hours is also quite high. At 22°C in a test tube with undiluted waste water, the number of these bacteria decreased by 193 for 2 hours of exposure, 200 for 4 hours of exposure and 260 for 24 hours of exposure.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--REACTIONS OF HALOMETAL ALCOHOLATES. XXX. SYNTHESIS OF STILBENES AND
1,4,DIARYL,1,3,BUTADIENES -U-
AUTHOR--(02)-LAPKIN, I.I., BORODINA, L.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHM. 1970, 6(3), 472-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, BUTADIENE, BENZENE DERIVATIVE, HYDROLYSIS,
GRIGNARD REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1674

STEP NO--UR/0366/70/006/003/0472/0474

CIRC ACCESSION NO--APOL12668

UNCLASSIFIED

2/2 011
CIRC ACCESSION NO--APO112668 UNCLASSIFIED PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF PHCH SUB2 CHO WITH
RMGBR (R IS PH, 2,5,ME SUB2 C SUB6 H SUB3, 3,4,M3 SUB2 C SUB6 H SUB3,
2,4,6,ME SUB3 C SUB6 H SUB2, 4-ETOC SUB6 H SUB4, 4-PROC SUB6 H SUB4,
4-BUCC SUB6 H SUB4, 2-PROC SUB6 H SUB4) GAVE PHCH SUB2 CHROMGBR (I).
THE HYDROLYSIS OF I WITH 10PERCENT HCL SOLN. GAVE THE CORRESPONDING
CARBINOLS. IN THE PRESENCE OF HCO SUB2 ET OR (CO SUB2 ET) SUB2 AND
10PERCENT HCL I GAVE PHCH:CRH (II) IN 51-87PERCENT YIELDS. ANALOGOUSLY
II (R IS 2,6,DIMETHYL,1,NAPHTHYL) AND PHCH:CHCH:CHPH WERE ALSO PREPD.
FACILITY: PERM. GOS. UNIV., PERM, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--STRUCTURE OF AN AQUO COMPLEX OF URANIUM IV -U-

AUTHOR--(04)-GLEBOV, V.A., KNYAZEV, YU.D., LEKAYE, V.A., BORODINA, N.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1332-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, URANIUM COMPOUND, TEMPERATURE DEPENDENCE,
PROTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1155

STEP NO--UR/0078/70/015/005/1332/1335

CIRC ACCESSION NO--AP0136575

UNCLASSIFIED--

2/2 017

CIRC ACCESSION NO--AP0136575

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. DEPENDENCE OF THE RELAXATION TIME OF PROTONS IN SOLNS. OF U (IV) WAS DETD. BY THE SPIN ECHO METHOD. THE STUDY REVEALS NONEQUIV. WATER MOLS. IN THE AQUOCOMPLEX OF U(IV); SOME OF THEM ARE BONDED STRONGER THAN OTHERS. IN THE INNER SPHERE, THE ACTIVATION ENERGY AND LIFE TIME OF THE STRONGLY BONDED WATER MOLS. ARE 11.0 PLUS OR MINUS 1.0 KCAL-MOLE AND 0.4 SEC (20DEGREES), RESP. A STRUCTURE OF THE U(IV) AQUO COMPLEX IS PROPOSED.

UNCLASSIFIED

USSR

UDC 621.357.13:699.822

SMIRNOV, M. V., BORODINA, N. P., and KOMAROV, V. E.

"Diffusion Coefficients of Uranyl Ions in Melts of Alkali Metal Halides and Their Mixtures"

Tr. In-ta elektrokhimii. Ural'sk nauch. tsentr. AH SSR (Studies of the Institute of Electrochemistry. Ural Science Center, Academy of Sciences USSR) Vyp 18, 1972, pp 64-68 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L427 by A. D. Davydov)

Translation: Diffusion coefficients were measured for uranyl ions in the following melts -- 3 LiCl-2KCl; NaCl-KCl; KCl; RbCl; and CsCl -- in the temperature interval 441-921°C. It was established that the diffusion coefficient of UO_2^{2+} decreased in the order above and increased with temperature.

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USSR

UDC 629.19:533.6

BORODINA, R. M., DOKUCHAYEV, L. V., YEFIMENKO, G. G.

"Three-Dimensional Motion of a Two-Body Packet in Orbit"

V sb. Konf. po kolebaniyam mekh. sistem. Tezisy dokl. (Conference on Oscillations of Mechanical Systems. Abstracts of the Reports), Kiev, "Nauk. dumka", 1971, p 12 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B260)

Translation: The authors consider the three-dimensional motion of two bodies bound by a flexible connector for the following three cases:

1. The bond is weightless and nonextensible, and the masses of the bodies are concentrated at a point. The center of mass of the system moves in a circular orbit. Gravitational and aerodynamic forces are taken into consideration. The regions of possible motions and the position of stable equilibrium are determined.
2. The bond is heavy, and there are no aerodynamic forces. Small oscillations of the system relative to some undisturbed motion are studied. Modes of oscillations in the plane of the orbit and in the perpendicular plane are determined.

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USSR

BORODINA, R. M. et al., Konf. po kolebaniyam mekh. sistem. Tezisy dokl.,
Kiev, "Nauk. dumka", 1971, p 12

3. The effect of external forces is disregarded, but distribution of the masses of the bodies and the elasticity of the cable are accounted for. It is assumed that the cable is weightless, stretches axially, is free of twist about its axis, and has no bending rigidity. Necessary conditions are found for stability of such rotation.

2/2

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USSR

UDC 615.371:576.858.21].014.45

BORODINA, T. A., State Institute of Standardization and Control of Medical Biological Preparations imeni Tarasevich, Moscow

"On the Problem of Contamination of Rabies Vaccine by Bacteria and Protozoa"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973,
pp 69-71

Abstract: Bacteria, particularly Gram-positive bacilli and cocci, are readily detected as contaminants in rabies vaccine production by culturing dry vaccine in nutrient medium and by the direct bacterioscopic method. Contamination by protozoa, however, is difficult to detect in the vaccine because the brain tissue from which it is derived is homogenized during production. Brain tissue from 256 young rats used in vaccine production was tested for the presence of *Encephalitozoon cuniculi* to assess the extent of protozoan contamination. While *E. cuniculi* cysts were not found in 96 rats studied in May-June, some were detected among 170 rats studied in the fall-winter season. The need for monitoring parent stock and protecting it from protozoan infection is concluded.

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USSR

UDC 615.371:576.858.21].012

KRAVCHENKO, A. T., and BORODINA, T. A., State Control Institute of Medical and Biological Preparations imeni L. A. Tarasevich, Moscow

"Prospects for Obtaining a Safe and Effective Antirabies Vaccine" (Review in Commemoration of the 150th Anniversary of the Birthday of Pasteur)

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 389-394

Abstract: Rabies is still treated by the original or somewhat modified vaccines and methods developed by Pasteur in 1885. This treatment is rather effective since it reduces mortality from about 50% among nontreated persons to about 0.4% among treated patients. This remaining mortality can be ascribed to several factors. In some vaccines, the fixed rabies virus still possesses some activity and causes postvaccinal rabies. The dry antirabies vaccine currently manufactured and used in the USSR has a much lower titer of fixed virus activity, and lethal results from vaccination have decreased to single cases. Vaccines contaminated with other viruses cause severe complications, and those contaminated with bacteria induce allergic reactions to polypeptides. Current USSR regulations prohibit the presence of either live or killed bacteria in the vaccines. Allergic reactions also occur to vaccines cultured in pure brain tissue of newborn animals. These are allergic reactions to foreign

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USSR

KRAVCHENKO, A. T., et al, Voprosy, No 4, Jul/Aug 71, pp 389-394

brain tissue, which involve stress reactions and even demyelination of the nervous tissue of the patient. Neither the USSR nor other countries have standards concerning the presence of brain tissue from the culture medium in the vaccine. Statistical data indicate that the frequency of postvaccinal rabies is relatively high when a large number of injections (up to 28) of antirabies vaccine are given during the treatment. For this reason, the Pasteur Institute reduced the number of injections to seven, and its recent report covering the 1952-1969 period indicates that this modification totally eliminated cases of lethal postvaccinal rabies. Thus, in order to be safe, the antirabies vaccine must contain no active rabies viruses, no other viruses or bacteria, and no animal brain tissue. In order to be effective even when marked temperature fluctuations occur during storage, the vaccine should be manufactured in the dry form, with the solvent supplied in separate vials. The prospects for obtaining a safe and effective antirabies vaccine are quite realistic.

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USSR

UDC 621.762.01(088.8)

FEDORCHENKO, I. M., MIROSHNIKOV, V. N., BORODINA, T. I., and SHEVCHUK, Yu. F.
"Compacted Metal Ceramic Material"

USSR Author's Certificate No. 268658, Filed 22/04/58, Published 9/07/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract
No. 2 G421 P)

Translation: A compacted metal ceramic material based on Fe contains metal fluoride. In order to increase the scale resistance, Al is introduced and the components are taken in the following relationship (%): BaF_2 0.5-15, Al 0.5-25, Fe -- remainder.

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USSR

GDC 577.3

HEGSELL', N. N., HOMERICH, V. C., VIKHRA, I. P., SULIVERSTON, L. A., BORODOV, Y. K., and ROTNIKOV, L. I., Institute of Microbiology, Academy of Sciences USSR, and Botanical Institute imeni V. I. Komarov, Academy of Sciences USSR

"The Mechanism of the Antimicrobial Action of Biologically Active Iodine Compounds"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 71, pp 819-829

Abstract: Bacteriological, phase-contrast, fluorescence, and electron microscope investigations revealed that the antimicrobial activity of iodine compounds is due to the positive monovalent iodide ion (I^-) and not to molecular iodine (I_2). The most active substances, such as iodine-potassium iodide and its compound with polyvinyl alcohol (ictinol), as well as oxidized hydroiodic acid and its compound with polyvinyl alcohol, readily penetrate yeast and bacterial cells and by combining with oxidizing the mitochondria, intracellular polysaccharides, and membrane lipoproteins, supplies and eventually completely inhibit the respiration of the cells.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--11 SEP'70
TITLE--PHYSIOCHEMICAL METHOD FOR EVALUATING THE RELATIVE ACTIVITY OF
FILLERS IN RUBBERS -U
AUTHOR--BORODINA, V.N., TOLSTAYA, S.N., TAUBMAN, A.B., LEVINA, A.YU.,
NIKIFOROVA, A.P.
COUNTRY OF INFO--USSR

SOURCE--KOZH. POBUV. PROM. 1970, 12(2), 37-41 *VS*

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FILLER, SILICA, KARLIN, RUBBER, POLYSTYRENE RESIN/(U)SKS30R
STYRENE RUBBER, (U)SKS30 STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PPOXY REEL/FRAME--1989/0206

STEP NO--UR/0498/70/012/002/0037/0041

CIRC ACCESSION NO--AP0106862
UNCLASSIFIED

2/2 013
CIRC ACCESSION NO--AP0106862 UNCLASSIFIED PROCESSING DATE--11SEP70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHYSICOCHM. METHOD WAS DEVELOPED FOR THE STUDY OF CROSSLINKING OF CONCD. SUSPENSIONS OF FILLERS (E.G. AEROSIL A-175(I), FINE SILICA FILLERS (II) (RS-150 AND RS-50), KAOLIN (III), AND CACO SUB3) IN DIL. SOLN. OF SKMS-30R (IV) AND SKS-30 (V) RUBBERS IN PHME. THE EXPTS. WERE CONDUCTED IN SMALL BEAKERS EQUIPPED WITH GROUND GLASS STOPPERS. A PORTION OF A FILLER WAS DRIED TO CONST. WT. AT 120-40DEGREES, PLACED IN THE BEAKER AND COVERED WITH 10 ML IV OR V SOLN. IN PHME, THE MIXT. WAS CAREFULLY STIRRED, AND A GROOVED MICA PLATE (10 TIMES 10 MM) WAS PLACED IN THE PPT. AFTER THE CROSSLINKING HAS BEEN COMPLETED, THE MAX. STATIC SHEAR STRESS (P_{SUBM}) WAS EVALUATED BY MEASURING THE TANGENTIAL DISPLACEMENT OF THE PLATE ON A WEILER REBINDER APP. A PLOT OF P_{SUBM} EQUALS $F(A)$ (WHERE A IS THE FILLER CONTENT-100 G VI) SUGGESTED THAT THE ACTIVITY OF FILLERS IN ELASTOMERS DECREASED IN THE ORDER: I LARGER THAN II LARGER THAN III LARGER THAN CACO SUB3. OPTIMUM FILLER CONTENT CAN BE DETO. FROM AN APPROPRIATE GRAPH.

UNCLASSIFIED

USSR

UDC 669.14:620.181

KIDIN, I. N., LIZUNOV, V. I., MAKSIMOVA, O. V., and BORODINA, YE. K., Moscow
Institute of Steel and Alloys

"Production of a Composite Material Based on the Ferrite-Martensitic Structure
of Steel 20"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1,
1973, pp 134-137

Abstract: The possibility of producing natural composite materials based on the layered ferrite-martensitic structure of steel 20 is analyzed. The method consists in heating steel by direct current transmission ($v=100$ deg/sec) up to $750-780^{\circ}\text{C}$ (two-phase region), rolling, and hardening in rollers. After such processing, a low-temperature anneal is carried out. At optimum processing conditions ($\epsilon \approx 40-50\%$, $t_{\text{anneal}}=250^{\circ}\text{C}$), the tensile strength $\sigma = 155-160$ kg/mm^2 and the elongation $\delta = 2-4\%$ at 100% viscous fracture. In this case, the structure consists of a ferritic matrix and sections of annealed martensite ($H = 530-550$), oriented along the axis of rolling. The dimensions and the form of martensitic section are determined, as is the volume part of the martensite, which equals $\approx 50\%$. Critical values of σ , v , and $1/h$ were 1/2

USSR

KIDIK, I. N., et al., *Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya*, No 1, 1973, pp 134-137

calculated; it is demonstrated that the produced material conforms to the requirements of composite materials. Four figures, one formula, seven bibliographic references.

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USSR

B

BORODKIN, A. I.; YAKOVENKO, V. M.; et al (Institute of Radio Physics and Electronics, Ukrainian Academy of Sciences, Khar'kov)

"Interaction of an Electron Flow with Surface Waves in a Semiconductor Plasma"

Leningrad, Solid State Physics; May, 1970; pp 1515-20

ABSTRACT: The interaction of a flow of electrons in a vacuum with surface waves in the plasma of a solid in the millimeter range was determined experimentally. As a result of the analysis of the experimental data and the dispersion equation it was established that this interaction has the effect of amplifying the waves of the space charge in a beam in the vicinity of the surface of a medium with a complex dielectric constant. This interaction is the strongest near the frequency of plasma resonance in a semiconductor ($\omega \approx 8 \cdot 10^{11} \text{ sec}^{-1}$).

The article includes 9 equations and 6 figures. There are 4 references.

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1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INTERACTION OF AN ELECTRON FLOW WITH SURFACE WAVES IN A
SEMICONDUCTOR PLASMA -U-

AUTHOR--(C4)-GRUDKIN, A.I., YAKOVENKO, V.M., LEVIN, G.YA., MAYSTRENKO,
YU.V.

COUNTRY OF INFO--USSR

B

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1515-20

DATE PUBLISHED-----70

SUBJECT AREA--PHYSICS

TOPIC TAGS--SEMICONDUCTOR PLASMA, SURFACE WAVE, ELECTRON FLOW, ELECTRON
INTERACTION, SPACE CHARGE, DIELECTRIC CONSTANT, PLASMA RESONANCE

CONTACT WARNING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KELL/FRAME--3004/0877

STEP NO--UR/C181/70/012/005/1515/1520

CIRC ACCESSION NO--AP0131464

UNCLASSIFIED

2/2 03C UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0131464

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. OBSERVATION WAS MADE OF THE INTERACTION OF AN ELECTRON FLUX MOVING IN VACUUM WITH THE SURFACE WAVES IN A SOLID STATE PLASMA IN THE MM RANGE. FROM THE EXPTL. DATA AND THE DISPERSION EQUATION, IT WAS ESTABLISHED THAT THE INTERACTION HAS THE CHARACTER OF AMPLIFICATION OF THE WAVES OF SPACE CHARGE IN THE BEAM MOVING CLOSE TO THE SURFACE OF THE MEDIUM WITH A COMPLEX DIELEC. CONST. THIS INTERACTION IS MOST EFFECTIVE CLOSE TO THE PLASMA RESONANCE FREQUENCY IN THE SEMICONDUCTOR (8 TIMES 10¹¹ SEC).
FACILITY: INST. RADIFIZ. ELEKTRON., KHARKOV, USSR.

UNCLASSIFIED

USSR

B

UDC 621.385.655

BOGOMOLOV, G. D., BORODKIN, A. I., KUSHCH, V. S., LEVIN, G. YA., RUBIN, F. S.,
CHIRILOVA, S. A.

"Investigation of the Excitation System of the 'Coms' Type in an Orotron Regime
and a Backward-Wave Tube Regime"

Elektron. tekhnika. Nauchno-tehn. sb. Elektron. SVCh (Electronic Technology.
Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 97-102
(from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract no 7A141)

Translation: An experimental comparison is made between the work of an orotron--
[microwave oscillator with oscillatory system in the form of an open resonator--
Transl.] and a backward-wave tube. The comparison was accomplished on a model of
a millimeter band oscillator in which backward-wave tube and orotron oscillations
were excited. The dispersion and control characteristics of both forms of oscil-
lations were investigated and also the levels of the power being generated were
compared. The stability of both forms of collector [K] is evaluated. 9 ref. Sum-
mary.

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USSR

UDC: 518.5:681.3.06

BORODKIN, F. M., UL'YANOVA, G. P.

"A System of 'One-Dimensional Statistic' Programs"

V sb. Vopr. ekon.-statist. modelir. i prognozir. v prom-sti (Problems of Economic and Statistical Modeling and Prediction in Industry--collection of works), Novosibirsk, 1970, pp 285-288 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V760)

[No abstract]

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RELATIVE MIGRATION TENDENCIES OF P SUBSTITUTED PHENYL GROUPS IN
CARBONIUM ION DOUBLY DEGENERATE REARRANGEMENTS -U-
AUTHOR--(05)-SHUBIN, V.G., KORCHAGINA, D.V., BORODKIN, G.I., DERENDYAEV,
B.G., KOPTYUG, V.A.
COUNTRY OF INFO--USSR

B

SOURCE--J. CHEM. SOC. D 1970, (11), 696-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, NUCLEAR MAGNETIC RESONANCE, UV SPECTRUM,
FLUORINATED ORGANIC COMPOUND, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0989

STEP NO--UK/0000/70/000/011/0696/0697

CIRC ACCESSION NO--AP0136419

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ORDER OF THE MIGRATION OF P, X, PHENYL GROUPS IN THE DOUBLY DEGENERATE REARRANGEMENT OF STABLE (I) IONS, FORMED BY PROTONATION OF NEUTRAL PRECURSORS, IS X EQUALS ME LARGER THAN F SIMILAR TO H LARGER THAN CL LARGER THAN CF PRIME3. THE NMR AND UV SPECTRA OF I ARE DISCUSSED. FACILITY: INST. ORG. CHEM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 615.332 (Streptomycinum), 615.849.1.015.25

BORODKIN, P. A., Institute of Biology, Komi ASSR Affiliate of the Academy of Sciences USSR

"Radioprotective Effect of Streptomycin on Human Chromosomes"

Moscow, Meditsinskaya Radiologiya, Vol 17, No 6, Jun 72, pp 73-75

Abstract: The radioprotective effect of streptomycin was studied by *in vitro* gamma-irradiation (500 r) of leukocytes from the blood of 2 adult males 30 min after removal and treatment with streptomycin. Chromosome analyses were carried out on cultures fixed after 60 hours of growth. The quantity of cells with chromosomal aberrations (%) and the number of aberrations per cell, respectively, were 64.5 and 0.51 for irradiated cultures with 600 units of streptomycin/ml of blood, 69.0 and 0.54 for irradiated cultures with 1,600 units/ml streptomycin, 0.9 and 0.009 for nonirradiated cultures with 600 units/ml, 1.9 and 0.019 for nonirradiated cultures with 1,600 units/ml, 91.7 and 1.49 for cultures irradiated only, and 0.4 and 0.004 for controls. Data indicates 25-30% reduction of aberration with streptomycin use, and that both drug concentrations may be overdoses. Streptomycin alone had an insignificant mutagenic effect. Its protective action was manifested by both greater numbers of normal cells and fewer aberrations per cell.

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USSR

UDC 547.559+668.819

AL'YANOV, M. I., BORODKIN, V. E., BENDERSKIY, V. A., and KHOYNOV, YU. I.,
Ivanovo Chemical-Technological Institute, Branch of the Institute of Chemical
Physics, Academy of Sciences USSR, Chair of Chemical Technology of Organic
Dyes and Intermediate Products

"Metalphthalocyanine Purification Method by Means of Vacuum Distillation "

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Khimiya i Khimicheskaya
Tekhnologiya, Vol 14, No 10, 1971, pp 1606-1608

Abstract: A method was developed for the sublimation of large amounts of metalphthalocyanines. The novelty of the process is in the introduction of a heat conducting filler into the metalphthalocyanine mass. The apparatus used in this process is described. It consists of a housing with a constricted "tail" portion, a flange, a setup for performing condensation and crystal collection, a condenser, thermal insulator and a heating unit. The material to be purified, including the heat conducting filler is loaded in a tray and inserted into the apparatus. It is followed by the removable receiver. The unit is hermetically sealed, evacuated, and heated slowly to 450°. The receiver then is pulled into the cold portion of the apparatus and the heating continued up to 525°C. Then the apparatus is cooled, the crystals 1/2

USSR

AL'YANOV, M. I., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Khimiya i Khimicheskaya Tekhnologiya, Vol 14, No 10, 1971, pp 1606-1608

obtained are ground up and the impurities formed due to some decomposition are extracted with acetone until colorless crystalline material is obtained.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PREPARATION OF HIGHLY METALLIZED SALTS OF OXY DERIVATIVES OF COPPER
PHTHALOCYANINE -U-
AUTHOR-(02)-ALYANOV, M.I., BORODKIN, V.F.

COUNTRY OF INFO--USSR

B

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2),
248-51
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHTHALOCYANINE, COPPER COMPLEX, SULFATE, HYDROXYL RADICAL, IR
SPECTRUM, IRON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0834

STEP NO--UR/0153/70/013/002/0248/0251

CIRC ACCESSION NO--AT0137863

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0137863

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HIGHLY METALLIZED SALTS OF 3, 3 PRIME, 3 PRIME PRIME, 3 PRIME PRIME PRIME, (II), 4, 4 PRIME, 4 PRIME PRIME, 4 PRIME PRIME PRIME, TETRAHYDROXYPHTHALOCYANINE CU COMPLEX (IA) AND OF 3, 3 PRIME, 3 PRIME PRIME, 3 PRIME PRIME PRIME, 6, 6 PRIME, 6 PRIME PRIME, 6 PRIME PRIME PRIME, OCTAHYDROXYPHTHALOCYANINE CU COMPLEX (II) ARE PREPD. IN 90-5PERCENT YIELD BY REACTION WITH SULFATES OF CU, BE, FE, CA, BA, CO, NI, SR, AND CO. FOR EXAMPLE, III AND IV ARE PREPD. BY ADDING A SOLN. OF CU SO₄ SUB4 (150 G-L) TO A SOLN. OF 1.45 G OF THE NA SALT OF I OR IA IN 200 ML H₂ O (OR TO 1.76 G OF THE NA SALT OF II IN 700 ML H₂ O), AND HEATING TO BOILING UNTIL A COLORLESS SAMPLE IS NOTED ON A FILTER PAPER TEST. THE PPT. IS FILTERED, WASHED WITH H₂ O, ETOH, AND ME₂ CO, AND DRIED AT 100-200DEGREES. THE CONTENT OF PERIPHERAL METAL RANGES FROM 2.3-4.4PERCENT FOR BE TO 20.1-32.7PERCENT FOR SR. THE SALTS DO NOT MELT AT SMALLER THAN 500DEGREES AND ARE INSOL. IN H₂ O AND ORG. SOLVENTS. THEY IGNITE IN AIR AT 450-600DEGREES AND BURN WITHOUT FLAME. THE IR SPECTRA OF THE FE AND CU COMPLEXES CONFIRM THE PROPOSED STRUCTURES, AND INDICATE DISAPPEARANCE OF A NO. OF BANDS CHARACTERIZING THE HYDROXY PRODUCTS OF COPPER PHTHALOCYANINE.

FACILITY: IVANOV. KHIM. TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PREPARATION AND PROPERTIES OF DISPERSE DYES WITH
HYDROXYETHOXYMETHYL GROUPS -U-
AUTHOR--(03)--BORODKIN, V.F., PETROVA, R.A., VIKHAREVA, N.M.

CCOUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 100-2

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ANTHRAQUINONE, AMINE, DYE, CAPRONE, HYDROXYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0962

STEP NO--UR/0153/70/013/001/0100/0102

CIRC ACCESSION NO--AP0124622

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124622

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON TREATMENT OF ARYLAMINOANTHRAQUINONES CONTG. A CLCH SUB2 GROUP WITH (CH SUB2 OH) SUB2 (I) AT 120-30DEGREES, HOCH SUB2 CH SUB2 OCH SUB2 GROUPS (Q) ARE FORMED. THE REACTION IS CONDUCTED BY GRINDING 1 G CLCH SUB2 SUBSTITUTED COMPD. WITH 30 ML I, ADDING 20 ML I TO GIVE A SOLN., HEATING WITH AGITATION TO 120DEGREES, AND HOLDING FOR 6 HR (FOR MONOARYL COMPD.), OR FOR 10 HR (FOR DIARYL COMPD.). MOST OF THE I IS VACUUM DISTD. AND THE REMAINDER WASHED OUT WITH 75 ML H SUB2 O. THUS WERE PREPD. II (R PRIME1-R PRIME3, PERCENT YIELD, M.P., LAMBDA SUBMAX IN NM, AND COLOR GIVEN): H, H, H 83, 80-30DEGREES, 512, BORDEAUX RED; H, OH, H, 68, 70-20DEGREES, 598, GREY VIOLET; H, 3,4,QMEC SUB6 H SUB3 NH, H, 69, 103-50DEGREES, 654, GREEN; ME, 2,4,6,3,ME SUB3 QC SUB6 HNH, H, 58, 148-50DEGREES, 534, BLUE; H, H, 3,4,QMEC SUB6 H SUB3 NH, 68, 114-111DEGREES (SIC), 532, LILAC. II ARE READILY APPLIED TO KAPRON FIBERS TO YIELD BRIGHT DYEINGS FAST TO H SUB2 O, WARM SOAPY H SUB2 O, AND OTHER REAGENTS. FACILITY: IVANONV. KHIM. TEKHNOl. INST., IVANONO, USSR.

UNCLASSIFIED

USSR

UDC: 681.327

KITOVICEH, V. V., STRAKHOV, V. G., BORODKIN, V. M., VOSTRIKOVA, Z. P.,
SAKHAROV, V. T.

"A Memory Device Using Magnetic Thin Films"

Moscow, Magnit. elementy avtomatiki i vychisl. tekhn. XIV Vses. soveshch., 1972. Ref. dokl. (Magnetic Elements in Automation and Computer Technology. Fourteenth All-Union Conference, 1972. Abstracts of Papers), 1972, pp 114-117 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B410 by V. R.)

Translation: The paper describes an immediate-access memory unit using thin films with a capacity of 1024 26-digit numbers with an access time of 0.7 μ s and a sampling time of 0.2 μ s. The device contains: a magnetic film module, an address decoding module, a readout-record amplifier module, and a localized control module. The memory module for data storage uses four magnetic film elements per symbol.

The magnetic film module consists of 16 aluminum matrices, each of which contains 140 x 66 Permalloy "spots" measuring 0.3 x 0.5 mm. Provision is made in the module for redundant information capacity: there are 96

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USSR

KITOVICEH, V. V. et al., Magnit. elementy avtomatiki i vychisl. tekhn. XIV soveshch., 1972. Ref. dokl., 1972, pp 114-117

reserve numbers and seven reserve digital places. The electrical parameters of the memory unit: readout current 250 mA, discharge current 60 mA, output signal 0.5 mV or more with a duration of 50 ns. Structurally the memory unit is made in the form of a block measuring 390 x 290 x 194 mm with a weight of 12 kg. Power consumption is 9 w. Bibliography of one title.

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AAC0052643

BORODKIN V.S.

UR 0482

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Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

240918 KNEE JOINT HOMOPLASTY uses arcs, spokes
and distractors, wherein the distractors
are beaker-shaped 8 and hold hinged spring-loaded
rods 9. This makes secure ostosynthesis of a
transplanted joint and allows mechano-therapy.
23.4.68. as 1235028/31-16. M.V.VOLKOV et alia.
Central Orthopedic Inst. (14.8.69.) Bul.13/1.4.69.
Class 30a. Int.Cl. A61b.

Volkov, M. V.; Tatishvili, G. G.; Sivash, K. M.; Borodkin, V. S.;
Khramov, V. D.
Tsentral'nyy Institut Travmatologii i Ortopedii

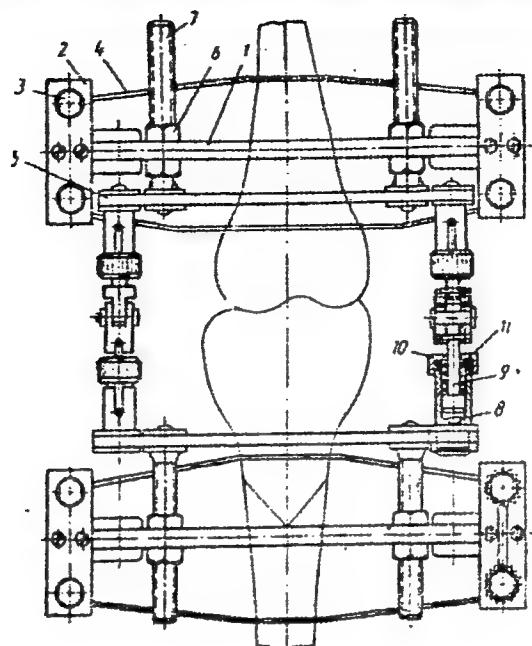
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APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002200430001-9"

USSR

UDC 629.7.018.2

BORODIN, Yu. P., KLYUKIN, S. M., KHEYFETS, V. A.

"A Device for Measuring the Aerodynamic Loads Acting on a Helicopter Rotor Model"

Moscow, Otkrytiya, Izobreteniya, Promyshlennye Obraztsy, Tovarnyye Znaki, No 2, Jan 73, Author's Certificate No 362216, Division G, filed 5 Apr 71, published 13 Dec 72, p 89

Translation: This Author's Certificate introduces a device for measuring the aerodynamic loads acting on a model of the lift rotor of a helicopter. The device contains amplifiers, low-frequency filters and a commutator which are connected in series, and also a control unit with its outputs connected to the commutator inputs and to the inputs of an analog-digital converter and a keypunch machine. The device also contains data transmitter units for the azimuthal position of the shaft of the helicopter rotor model. As a distinguishing feature of the patent, the accuracy of measurement of aerodynamic loads is improved by locating the data units for the azimuthal position of the shaft diametrically opposed, and connecting them to the input of the control unit through a pulse shaper which is incorporated into the device.

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USSR

UDC 612.821.3

BORODKIN, YU. S., and KRAUZ, V. A., Department of Pharmacology, Scientific Research Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Pharmacological Analysis of the Participation of the Hippocampal-Reticular Complex in the Memory Process"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, No 1, Jan/Feb 73, pp 166-173

Abstract: In dogs, endogenous acetylcholine, orotic acid, ethiphenyl, ethipyrol, ethimyzol, and phenamine (administered intramuscularly or orally) improve short-term memory and, at the same time, lower the excitability of the dorsal hippocampus and raise the excitability of the mesencephalic reticular formation. Anticholinergic drugs, such as metamizol and glypine, exert the opposite effect. They impair short-term memory, raise the excitability of the dorsal hippocampus, and inhibit M-cholinoreceptors in the reticular formation. It appears that improvement in memory is conditioned by a higher reciprocity between the dorsal hippocampus and the mesencephalic reticular formation, while deterioration of memory is due to a disturbed mutual relationship between these two structures.

1/1

USSR

UDC 612.821.2.014.46:615.21

BORODKIN, Yu. S. and KRAUZ, V. A., Laboratory of Experimental Pharmacotherapy
Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Role of Intracentral and Interneuronal Relationships in the Mechanism of Control of Short-Term Memory"

Moscow, Farmakologiya i Toksikologiya, No 5, 1972, pp 533-537

Abstract: Experiments on dogs and rabbits showed that an improvement or deterioration of short-term memory is directly related to the state of reciprocity existing both between individual structures of the hippocampal-reticular complex and between individual neurons and neuronal populations within a single structure. Such neuropharmacologic agents as nivaline [Gananthus woronowii alkaloid], orotic acid, ethimysol, ethipyrol, ethephil, and amphetamine improved short-term memory by increasing the excitability of the reticular formation while depressing that of the dorsal hippocampus. On the other hand, the central m-cholinolytics methyldiazil and glipin impaired short-term memory by exciting the dorsal hippocampus and depressing the reticular formation.

1/1

USSR

UDC 615.217.34.015.45:612.826.2

BORODKIN, Yu. S., and KRAUZ, V. A., Division of Pharmacology at the Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"The Effect of Central Cholinolytics on the Interrelations of the Mesencephalic Reticular Formation With the Structures of the Forebrain and Diencephalon"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 3, May-Jun 71, pp 259-263

Abstract: The role of cholinoreactive systems in the interrelations of mesencephalic reticular formation with the forebrain and diencephalon structures was studied on female rabbits with electrodes implanted into the brain structures. The inhibition of brain cholinoreceptors with central m-cholinolitics -- methyldiazine(metamizil) and intravenously injected scopolamine did not disrupt relations between the mesencephalic reticular formation and the limbic system structures. Glypine and atropine tended to distort these interrelations. Glypine exerted a similar influence on the relation between the reticular formation of the mesencephalon and non-specific thalamic nuclei. Inhibition of the brain n-cholinoreceptors with various substances of the n-cholinolytic series did not upset relations between the mesencephalic reticular formation and those of the forebrain and diencephalon.

1/1

- 67 -

USSR

UDC 669.24:538.221

BORODKINA, M. M., PESIN, V. S., SMIRNOVA, L. G., SOSNIN, V. V., and STAROSTIN, Yu. V., Institute of Precision Alloys of the Central Institute of Ferrous Metallurgy imeni I. P. Bardin

"Magnetic Properties and Texture of a Thin Band of Nickel-Iron-Molybdenum Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1188-1194

Abstract: A study was made of the magnetic properties (coercive force, induction, and the rectangularity factor) and the texture of bands of Ni-Fe-Mo alloys (75-87%Ni, 0-5.5%Mo) 20, 5, and 2 μ m thick. The optimum cooling rate ensuring the highest \mathcal{K} value depends on Ni and Mo contents and the final reduction value in rolling. The optimum final reduction increases with decreasing thickness. The predominance of the $\langle 111 \rangle$ or $\langle 100 \rangle$ textures is essentially for \mathcal{K} in the case of relatively thick bands ($\geq 5 \mu$ m). For 20- μ m-thick bands, there is a correlation between the relation of the $\langle 111 \rangle$ & $\langle 100 \rangle$ orientations and the rectangularity factor \mathcal{K} . For 5- μ m-thick bands, a correlation is observed only at high reductions, and for 2- μ m-thick bands there is no correlation. In the thinnest bands, a mechanism which is independent of the magnetocrystalline anisotropy and which can be related to orientated imperfections produced by rolling with high reduction rates, is probably predominant. Six figures, two tables, twelve bibliographic references.

1/1

Acc. Nr:

AP0048290

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:
GR 0472

✓ 94015v Heterogeneity of deformation and texture during the rolling of crystals. Belousova, N. S.; Borodkina, M. M.; Leskov, B. A.; Matorin, V. I. (USSR). *Fiz. Khim. Obrab. Mater.* 1970, (1), 133-9 (Russ). Flat specimens were cut from a Fe + 45% Ni single crystal obtained by the Czochralski method. In cold-rolling, crystals with a (110)[112] orientation remain stable up to 91% deformation. The surface layer exhibits a small deviation from an ideal orientation. Scattering is small. The (110)[110] orientation is unstable. It passes, in rolling, into an (112)[111] + (112)[111] orientation with a high scattering and a high heterogeneity in depth. *GBJR*

5/3

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REEL/FRAME
19792012

18

USSR

B

UDC: 681.84

4

NAKHODKIN, N. G., KUVSHINSKIY, N. G., SHEVLYAKOV, YU. A., NEFISEV, V. P., NEUZHIIY, S. A., BORODKINA, M. S., USPENSKIY, V. I., SHERERSTOV, V. I., Kiev State University imeni T. G. Shevchenko and the All-Union Scientific Research Institute of the Chemical and Photographic Industry

"A Photothermopolymerization Data Recording Method"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, p 48, patent No 259961, filed 25 Jan 67

Abstract: This Author's Certificate introduces a photothermopolymerization data recording method based on the cross-linking response of polymers when they are exposed to radiation such as light. As a distinguishing feature of this method, the resolving power of the recording is improved and permanent recordings are made by converting the latent image to a three-dimensional relief with subsequent fixation through the process of heating the carrier material to its softening temperature and then cooling it.

1/1

Acc. Nr:

AP0102300 Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

UR 0441

B

111987h Spatial structure formation and thermomechanical characteristics of polymer homologs. Nizhnik, A. S.; Mel'nikova, Ch. A.; Uskov, I. A.; Pochinok, V. I.; Borodkina, M. S. (Kiev, Derzh. Univ., Kiev, USSR). *Dopov. Akad. Nauk Ukr. RSR, Ser. A* 1970, 32(1), 54-6 (Ukrain). Thermomech. and rheol. properties of typical amorphous polymer homologs of Bu methacrylate were investigated. A forced flow point (a conditional characteristic of the polymer) and a true flow point (a phys. const. of the polymer) were distinguished. O. Elsner

CB

11

REEL/FRAME
19860250

7

1/2 026

UNCLASSIFIED

PROCESSING DATE--23 OCT 70

TITLE--EFFECT OF AXIAL SUBSTITUTIONS ON COBALT CARBON AND COBALT NITROGEN

BONDS IN COBALOXIMES -U-

AUTHOR--(05)-ROSHCHUPKINA, O.S., RUDAKOVA, I.P., POSPELOVA, T.A.,
YURKEVICH, A.M., BORODKO, YU.G.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. OBSHCH. KHM. 1970, 40(2), 466-70

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COBALT COMPLEX, OXIME, PYRIDINE, IR SPECTRUM, ELECTRON DONOR,
EXCHANGE REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1419

STEP NO--UR/0079/70/040/002/0466/0470

CIRC ACCESSION NO--AP0116866

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116866

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING CHLOROPYRIDINE (OR TRIPHENYLPHOSPHINO) BIS(DIMETHYLGLYOXIME)COBALT SUSPENSION IN AQ. ETOH WITH NABH SUB4 GAVE COBALOXIMES I WITH INDICATED L AND R: C SUB5 H SUB5 N, ME, M. 220DEGREES; C SUB5 H SUB5 N, CD SUB3, D. 210DEGREES; PH SUB3 P, ME, M. 174-6DEGREES; PH SUB3 P, CD SUB3, M. UNSTATED; ME SUB2 S, ME, M. 178DEGREES; H SUB2 O, ME M. 108DEGREES; C SUB5 H SUB5 N, HOCH SUB2 CHCH SUB2 CL, M. 179-80DEGREES. THE IR SPECTRA ARE SHOWN. INCREASED ELECTRON ACCEPTOR NATURE OF SUBSTITUENTS IN I REDUCES THE FREQUENCY OF CO-C AND CO-N BANDS WHILE INCREASED ELECTRON DONOR ABILITY OF AXIAL LIGANDS IN I SHIFTS THE CO-C AND CO-N BANDS TOWARD HIGHER FREQUENCIES.

FACILITY: VSES. NAUCH.-ISSLED. VIT. INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--PREPARATION AND STUDY OF COMPLEXES OF OSMIUM,II, WITH MOLECULAR
NITROGEN -U-

AUTHOR--(03)--BORODKO, YU.G., KOZUB, G.I., MYAGKOV, YU.P.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. FIZ. KHM. 1970, 44(5), 1153-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OSMIUM COMPOUND, COMPLEX COMPOUND, NITROGEN, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0886

STEP NO--UR/0076/70/044/005/1153/1157

CIRC ACCESSION NO--AP0137914

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137914
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMMINE COMPLEXES OF OS(II) CONTG. MOL. N IN THE INNER COORDINATION SPHERE OF OS ARE FORMED UPON THE REACTION OF HYDRAZINE HYDRATE WITH K SUB2 OSCL SUB6, OSCL SUB4, OSOHCL SUB3, AND OTHER COMPDs. OF OS IN Aq. SiLN. THE IR SPECTRA INDICATE THAT THE CATION (OSN SUB2(NH SUB3) SUB5) PRIME POSITIVE BELONGS TO THE C SUB4V SYMMETRY GROUP, AND THE N SUB2 MOL. IS LOCATED IN A LINEAR POSITION COMPARED TO THE OS. THE SPECTRAL FREQUENCIES OF ISOTROPIC SUBSTITUTED COMPDs., (OS PRIME15 N SUB2(PRIME15 NH SUB3) SUB5)X SUB2 AND (OSN SUB2(ND SUB3) SUB5) X SUB2, ARE GIVEN. THE VALENCE VIBRATION OF THE N:N BOND IS CHARACTERIZED BY ABSORPTION IN THE 2012-34 CM PRIME NEGATIVE1 RANGE AND THE OS,N SUB2 BOND IN THE 500-18 CM PRIME NEGATIVE1 RANGE. SPLITTING OF THE 2012 CM PRIME NEGATIVE1 BAND INTO A SERIES OF COMPONENTS IS EXPLAINED BY RESONANCE INTERACTION OF THE (OSN SUB2(NH SUB3) SUB5)X SUB2 MOL. IN THE ELEMENTARY UNIT CELL OF THE CRYSTAL.
FACILITY: FILIAL INST. KHM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PREPARATION AND STUDY OF COMPLEXES OF RUTHENIUM II WITH MOLECULAR
NITROGEN -U-
AUTHOR--(03)-BCRUDKG, YU.G., SHILOVA, A.K., SHILOV, A.YE.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. FIZ. KHM. 1970, 44(3), 627-31

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, RUTHENIUM COMPOUND, METAL COMPLEX
COMPOUND, IR SPECTRUM, TETRAHYDROFURAN, ORGANIC COMPLEX COMPOUND,
CHEMICAL REDUCTION, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PRXY REEL/FRAME--3004/2041

STEP NO--UR/0076/70/044/003/0627/0031

CIRC ACCESSION NO--APO132298

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO.—AP0132298
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEXES OF RU PRIME2
POSITIVE WITH MOL. N AND SOME OTHER LIGANDS WERE PREPD. AND STUDIED BY
IR SPECTRA MEASUREMENT. (RUN SUB2 CL SUB2 (H SUB2 O) SUB2 (THF)) (WHERE
THF IS TETRAHYDROFURAN) IS FORMED DURING THE REDN. OF RUCL SUB3.NH SUB2
O BY ZN IN THF SGLN. SATD. WITH N IN AN AUTOCLAVE. BASES STRONGER THAN
H SUB2 O IN THE COMPLEX, THE N BEING KEPT IN THE COORDINATION SPHERE. IN
THIS WAY, A SERIES OF COMPLEXES OF THE TYPE (RUN SUB2 L SUB5) PRIME2
POSITIVE WAS PREPD., IN WHICH L EQUALS THF, H SUB2 O, C SUB5 H SUB5 N,
CH SUB2 (NH SUB2) SUB2, AND NH SUB3. THE FORCE CONSTS. OF THE BONDS N
TRIPLE BOND N, RU-N SUB2, AND THEIR INTERACTION CONST. WERE CALCD.: K
SUB1 EQUALS 29.3 TIMES 10 PRIME6 CM PRIME NEGATIVE2, K SUB2 EQUALS 5.48
TIMES 10 PRIME6 CM PRIME NEGATIVE2, AND K SUB12 EQUALS 1.25 TIMES 10
PRIME6 CM PRIME NEGATIVE2, RESP. THE N MOL. IN THE COMPLEXES IS NOT
REDUCED TO NH SUB3 BY NABH SUB4, NA SUB2 S SUB2 O SUB4, CRCL SUB3, ZN
PLUS HCL, OR PHMGR. THE IR ABSORPTION BANDS OF THE COMPLEXES ARE
TABULATED. FACILITY: INST. KHM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR

UDC 621.373.58

BORODOVSKIY, P. A., BULDYGIN, A. F., UTKIN, K. K.

"Series Operation of Gunn Diodes in a Coaxial Resonator"

Kiev, Izvestiya vuzov SSSR, Radioelektronika, Vol XV, No 8, 1972, pp 954-958

Abstract: An experimental study was made of the operation of two decimeter-band Gunn diodes manufactured from a single n-GaAs crystal included in series in a coaxial resonator with spacing between them much less than the wavelength of the generated oscillations. On series operation of the Gunn diodes, the output power is equal to the sum of the powers generated by these diodes on inclusion of them one at a time. With defined tuning of the coaxial resonator, nonsinusoidal microwave oscillations were observed the period of which was approximately equal to the drift time of the domains arising alternately in the series-connected Gunn diodes. Oscillograms of these oscillations are presented, and the amplitudes of the microwave oscillations are shown as functions of the resonator length and bias voltage. The nonsinusoidal nature of the oscillations at the microwave resonator output arises from the significant content of the harmonic corresponding to the drift frequency of the domain. On tuning the resonator, the amplitude of this harmonic changes which leads to variation of the shape of the oscillations observed at the resonator output. Excitation of the subharmonic oscillations in the resonator is facilitated as 1/2

USSR

BORODOVSKIY, P. A., et al., Izvestiya vuzov SSSR, Radioelektronika, Vol XV, No 8, 1972, pp 954-958

a result of the external negative resistance of the diode with the traveling domain and also the negative resistance at a frequency half the drift frequency of the domain as a result of the parametric effect. With appropriate selection of the microwave resonator and the degree of its coupling to the load it is possible to achieve effective series operation of Gunn diodes with noticeably different parameters at moderate bias voltages.

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- 99 -

USSR

UDC 621.382.2

BORODOVSKIY, P. A., BULDYGIN, A. F., ZIMENKOV, V. A., Institute of Physics of Semiconductors, Siberian Department of the Academy of Sciences of the USSR, Novosibirsk

"Effect of a Magnetic Field on the Domain of a Strong Field in a Gunn Diode"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 9, Sep 71, pp 1706-1709

Abstract: Experiments are done which show that a transverse external magnetic field has an appreciable effect on the frequency and output power of a Gunn oscillator. It is found that the emission frequency in a transverse field is increased by a reduction in domain capacitance due to domain broadening. An increase in emission frequency by more than 35 percent was observed for one of the diodes when the transverse magnetic field strength was varied from 0 to 18,000 oersteds. The threshold voltage and frequency remain practically unchanged in a longitudinal magnetic field. With an increase in field strength, the emission power at the oscillator output decreases in both transverse and longitudinal fields.

1/1

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USSR

UDC: 621.315.592

BORODOVSKIY, P. A. and BULDYGIN, A. F.

"Microwave Amplification by Periodic Excitation and Suppression
of the Gunn Diode Traveling Domain by an External Signal"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol. 5, No. 2, 1971,
pp 247-250

Abstract: This paper gives the experimental results of an investigation into a Gunn diode parametric amplifier with an external microwave pumping signal whose frequency is twice that of the domain travel with the diode in oscillation. In the experiments, the diodes were of the decimeter wavelength range, operated in the pulse mode. The measurements made are given for a single diode with specified parameters. With the bias voltage 2.5 times the threshold value, the diode oscillated at a frequency of 1.2 GHz with an output pulse power of 1.8 watts. When a signal with a frequency close to the domain travel frequency was introduced into a Gunn diode resonator at a bias voltage less than the threshold value, a synchronous amplification effect was found at the 1/2

USSR

BORODOVSKIY, P. A. and BULDYGIN, A. F., Fizika i Tekhnika poluprovodnikov,
Vol 5, No 2, 1971, pp 247-250

output, with the amplification factor a function of the bias voltage and the power of the input uhf signal. The authors note that the amplifier works best with external rather than self pumping.

2/2

- 3 -

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SYNTHESIS OF CONTROLLING THE FINAL STATES OF SPACE VEHICLES -U-

AUTHOR--BORODOVSKIY, V.N.

COUNTRY OF INFO--USSR

B

SOURCE--KOSMICHESKIE ISSLEDOVANIYA, VOL. 8, MAY-JUNE 1970, P. 350-359

DATE PUBLISHED-----70

SUBJECT AREAS--SPACE TECHNOLOGY, MATHEMATICAL SCIENCES, ORDNANCE

TOPIC TAGS--TRAJECTORY, LINEAR FUNCTION, ROCKET

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/C08 STEP NO--UR/0293/70/008/000/0350/0359

CIRC ACCESSION NO--AP0140377

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140377

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE SYNTHESIS OF
CONTROLLING THE STATES OF A MULTISTAGE ROCKET AT INDIVIDUAL POINTS OF
ITS POWERED FLIGHT TRAJECTORY. IT IS PROPOSED TO BASE THE SYNTHESIS ON
CERTAIN LINEAR FUNCTIONALS SUITABLE FOR DETERMINING THE VARIATION OF THE
FUNCTIONAL BEING STUDIED. LINEAR METHODS OF FUNCTIONAL ANALYSIS ARE
USED TO SELECT THE CONTROL LAW AND TO PREDICT THE STATES. THE
SYNTHESIZED CONTROL IS ALSO LINEAR.

UNCLASSIFIED

USSR

UDC: 621.372.2:621.374.5

BORODOVSKIY, V. S. and GAL'PEROVICH, D. Ya.

"Nanosecond Pulse Transmission Through Superconducting Coaxial Cable"

Moscow, Radiotekhnika, No 11, 1972, pp 51-55

Abstract: A description is given, in theoretical terms, of miniature superconducting cable with an inner niobium conductor and an outer lead conductor. The cable becomes superconductive when placed in a bath of liquid helium, at a temperature of 4.2° K, which is below the critical temperature level for both niobium and lead. The use of superconductive cable is especially beneficial in the transmission of nanosecond pulses because of its tendency to reduced distortion of the pulse shape, the result of low losses in the metal and in the dielectric. Using the experimental data from an earlier article and the theoretical results of another, the authors of the present paper show that the losses in the superconducting cable dielectric in the frequency range corresponding to the spectra of the nanosecond pulses are commensurate with the losses in the metal, and may even be higher. Photographs of the cable and of its transmitted pulses are shown. The authors are "united" 1/2

USSR

UDC: 621.372.2:621.374.5

BORODOVSKIY, V. S., et al, Radiotekhnika, No 11, 1972, pp 51-57

A. Denisov and A. Voloshin for the experimental part of the article in which the transmission of 180 ns pulses with a leading edge of 0.2 ns through superconducting cable 135 m long and with a characteristic impedance of 75 ohms was tested.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SESQUISULFIDES OF RARE EARTH ELEMENTS AND YTTRIUM -U-

AUTHOR--(02)--GRIZIK, A.A., BORODULENKO, G.P.

B

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,090.

REFERENCE--OTKRYIAYA, IZOBRET, PROM OBRAZTSY, TOVARNYE ZNAKI 1970, 47(10),
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--RARE EARTH METAL, YTTRIUM, METALLURGIC RESEARCH FACILITY,
SULFIDE, CYANIDE, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1440

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126971

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0126971
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPODS. ARE PREPD. BY
SULFIDIZATION OF O-CONTG. RARE EARTH AND Y OXIDES WITH AN NH SUB4 SCN
HELT IN A MOLAR RELATION OF 1:6-1:12 AT 170-250DEGREES IN A CURRENT OF
INERT GAS. SUBSEQUENT RARE EARTH AND Y THIOCYANATES ARE BROKEN DOWN AT
400-800DEGREES IN A SULFIDIZING MEDIUM. FACILITY:
GOSUDARSTVENNYY NAUCHNO-ISSLEDOVATEL'SKIY I PROYEKTNYY INSTITUT
REKONETALLICHESKOY PROMYSHLENNOSTI.

UNCLASSIFIED

USSR

UDC 621.396.679.6.029.64.07

BORODULIN, A. A.

"Limit Parameters of Ultra High Frequency Repulsion Phase Shifter With Continuous Electric Control"

Moscow, Antennu, No 13, 1971, pp 40-55

Abstract: Equations of the ultra high frequency repulsion phase shifter with one control element are analyzed.

The control should provide maximum phase shift with no change of power output and with minimum loss of power.

It is shown that the modulus of the phase shifter repulsion coefficient can be constant only if the impedance hodograph of the control element is an arc of circle or a straight line. Formulae giving the limit values of the modulus of repulsion coefficient and the phase change as a function of control impedance are derived. A table gives the numerical values of the parameters obtained from the formulae.

1/1

- 14 -

1/2 016 UNCLASSIFIED PROCESSING DATE--23OC170
TITLE--THERMAL OPERATION OF A BLAST FURNACE DURING COMBINATION BLAST -U-

AUTHOR--(02)-BORODULIN, A.V., SEMIKIN, I.D.

COUNTRY OF INFO--USSR

B

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 160-4

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, NATURAL GAS, COAL, METAL REDUCTION, HEAT ENERGY
CONVERSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1403

STEP NO--UR/0148/70/013/002/0160/0164

CIRC ACCESSION NO--ATC120196

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0120196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCNS. SHOW THAT WITH BLAST TEMP. OF 1000DEGREES, THE COEFF. OF HEAT UTILIZATION OF COKE IS 0.34, WHILE THAT OF COLD COAL DUST IS 0.27, AND THAT OF C IN NATURAL GAS IS NEGATIVE0.08. HERE LIES THE GREAT ADVANTAGE OF COAL DUST OVER NATURAL GAS AS A BLAST FURNACE FUEL. BLAST ENRICHMENT WITH O LOWERS THE DYNAMIC PRESSURE OF THE GAS STREAM (BECAUSE OF SMALLER VOL.), AND THIS ENABLES ONE TO INCREASE THE AMT. OF HEAT EVOLVED IN THE FURNACE WITHOUT INCREASING THE AERODYNAMIC RESISTANCE OF THE CHARGE. THE COLD NATURAL GAS CAUSES A DECREASE OF THE HEAT UTILIZATION COEFF. IN A BLAST FURNACE (E.G., WITH 77 M PRIME3-TON PIG IRON, THE COEFF. DECREASED BY 12PERCENT). THE COKE ECONOMY DUE TO THE USE OF NATURAL GAS IS PRIMARILY CAUSED BY THE DECREASE OF DIRECT REON. OF THE FE. THE ENRICHMENT OF THE BLAST WITH O TO 26.4PERCENT INCREASED THE AMT. OF HEAT GENERATED IN THE FURNACE BY 20PERCENT AND THE PRODUCTIVITY BY 10PERCENT. THE INCREASE OF AIR BLAST TEMP. BY 100DEGREES IN THE INTERVAL 1200-1500DEGREES INCREASED THE PRODUCTIVITY OF THE BLAST FURNACE BY 4-5PERCENT AND DECREASED THE FUEL CONSUMPTION BY 1.5-2PERCENT; HOWEVER, THE VOL. OF GASES AND THE AERODYNAMIC RESISTANCE OF THE CHARGE INCREASED. FACILITY: DNEPROPETROVSK. MET. INST., DNEPROPETROVSK, USSR.

UNCLASSIFIED

SINITSYN, V. A., POPOV, I. A., BORODULIN, G. I., MAL'TSEV, B. N., KOTKOV,
A. V.

"Experimental Industrial Tests of the MSD-1 Phototachymeter"

Moscow, Geodeziya i Kartografiya, No 11, 1971, pp 30-31

Abstract: The paper gives basic technical data and the results of experimental industrial tests of the MSD-1 phototachymeter developed by the All-Union Scientific Research Institute of Mining Geomechanics and Surveying for measuring distances in underground surveying jobs. The instrument has a range of action of 1-300 meters with an accuracy of $\pm(2 \text{ mm} + 5 \cdot 10^{-6} D)$. Measurements take 3-8 minutes. The test results show that the instrument is highly accurate and can be used in special geodetic engineering jobs as well as in surveying work. One figure, two tables.

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USSR

UDC. 621.315.592

ANDREYEV, V. M., BORODULIN, V. I., KONYAYEV, V. P., PAK, G. T., PETROV, A. I.,
PORTNOY, Ye. L., SHVEYKIN, V. I., Physicotechnical Institute imeni A. F.
Ioffe, Academy of Sciences of the USSR, Leningrad

"Spatial Distribution of Heterolaser Emission"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1739-
-1748

Abstract: The paper presents the results of experimental and theoretical studies of the luminous field of emission from a heterolaser in the short range and long range zones for various thicknesses of the active region and outside dimensions of the cavity. The distribution of the luminous field on the mirror face of the cavity crosswise of the active region which was observed in the experiments can be satisfactorily described within the framework of a flat triaxial waveguide model. The angular distribution of heterolaser emission in the plane perpendicular to the heterojunction plane can be treated with a fair degree of accuracy as diffraction of a waveguide wave on the open end of a flat metal waveguide filled with a dielectric. The pattern of the long-range field is symmetric relative to the normal to

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USSR

ANDREYEV, V. M., et al., *Fizika i Tekhnika Poluprovodnikov*, Vol 6, No 9, Sep 72, pp 1739-1748

the mirror. The directions to the principal maxima are determined by the angle of refraction of the partial waveguide plane waves. Modes of increasingly higher orders are stimulated in the active region as its width is increased. The pattern of the short-range field (order of the mode) does not depend on either the cavity length or the pumping. In heterolasers with wide active regions, three-dimensional modes of total internal reflection are stimulated which impair the quantum efficiency and increase the divergence of emission. These modes can be suppressed by increasing the ratio L/l , TM modes being suppressed faster.

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USSR

UDC 621.375.82

BORODULIN, V. I.; MALYAVKINA, G. M., PAK, G. T., PETROV, A. I., CHERNOUSOV, N. P., SHVEYKIN, V. I., YASHUMOV, I. V.

"Some Properties of Degradation of Heterolasers"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Moscow, Soviet Radio, 1972, pp 108-110 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D977)

Translation: An experimental study was made of the catastrophic and slow degradation of heterolasers. It was demonstrated that catastrophic degradation occurs for average light energy flux densities $(2-4) \cdot 10^6$ watts/cm² and local densities of 10^7 watts/cm². Depending on the light energy flux density the service life of the heterolasers can vary from several minutes to 100 hours and more; catastrophic degradation in this case is the limiting case of slow degradation under the effect of radiation. Heterolasers with a radiation power in the pulse of > 10 watts, a frequency of 6 kilohertz, and a pulse duration of 100 nanoseconds are capable of operating more than 100 hours without a significant reduction in power.

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UDC 621.315.592

ALFEROV, ZH. I., ANDREYEV, V. M., BELOUSOVA, T. YA., BORODULIN, V. I., GORBYLEV, V. A., PAK, G. T., PETROV, A. I., PORTNOY, YE. L., CHERNOUSOV, N. P., SHVEYKIN, V. I., YASHCHUMOV, I. V.

"Effective Injection Heterolasers Operating in the Wavelength Band of 7,400-9,000 Å"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 568-569

Abstract: Results are presented from a study of the characteristics of effective heterolasers radiating in the wavelength band of 7,400-9,000 Å at room temperature. The $n\text{-Al}_x\text{Ga}_{1-x}\text{As-p-Al}_y\text{Ga}_{1-y}\text{As-p}^+\text{-Al}_x\text{Ga}_{1-x}\text{As}$ heterojunctions were obtained by epitaxial growth from GaAs-AlAs solutions. All the investigated diodes had a Fabry-Perot resonator. The threshold current density, the external differential quantum efficiency and the radiation power per pulse at 300°K are tabulated for various models of the lasers. Graphs are presented showing the mean values of the threshold current density and the external differential quantum efficiency as functions of the emission quantum energy and the temperature dependence of the external differential quantum efficiency. The threshold current density increases exponentially with an increase in temperature according to the known law [V. I. Leskovich, et al., FTP, No 1, 1440, 1967]. Up to 1/2

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ALFEROV, Zh. I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972,
pp 568-569

a temperature of 250° K, the external differential quantum efficiency does not vary, in practice, but then it decreases with temperature. The data demonstrate the possibility of obtaining generation in the continuous mode at 300°K up to 7,700 Å.

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USSR

UDC 632.951:581.135

BORODULINA, F. Z., BERNATSKAYA, M. L., Moscow State University

"Effect of High Concentrations of Rogor on Apple-tree Water Regime"
Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 1, Jan 70, pp
22-24

Abstract: In 1966 N. I. YEFREMOVA, a staff scientist of the All-Union Scientific Research Institute of Agricultural Machinery, Sevin and Rogor at the Orchard of the Crimean Fruit Experimental Station. It was found that low-volume spraying with Rogor in a concentration of 0.6 percent a. i. (active ingredient) with a liquid consumption of 500 l/ha affects the water regime of the apple trees. Treatment of the trees is followed by reduced water mobility, resulting in weakened transpiration and increased suction force and water retentiveness. Necrotic spots appeared on the leaves. Another experiment was carried out in 1967 on 15-year-old trees at Lenin Hills in Moscow. The trees were sprayed with a

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BORODULINA, F. Z., BERNATSKAYA, M. L., Khimiya v Sel'skom Khozyaystve, Vol 8, No 1, Jan 70, pp 22-24

Rogor emulsion containing 0.3 and 0.75 percent a. i. Although the conditions of treatment were different in the 1966 and 1967 experiments (a ventilator device was used for spraying in 1966, a spray gun in 1967), the results were similar in many respects.

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USSR

UDC: 681.3.06:51

BORODULINA, N. G.

"Requirements Imposed on Intermediate Languages Used in Systems for Automation of Programming"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 6, Moscow, "Sov. radio", 1971, pp 54-61 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V712)

Translation: The paper discusses symbolic logic languages used as intermediate languages: the SSK language for the "Minsk-32" computer, an assembly language for computers of the IBM-360 type, the APNU language for the "Ural-11", "Ural-14" and "Ural-16" computers and the universal machine-oriented language ALMO. The article is useful to developers of machine translators. Author's abstract.

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USSR

UDC 615.272.2:547.821.4.03:616.24-003.662-092.9

KATSNEL'SON, B. A., BABUSHKINA, L. G., ARONOVA, G. V., STARIKOVA, S. K.,
POCHASHEV, Ye. N., SHNAYDMAN, I. Ya., POSTOVSKIY, S. N., BORODULINA, S. N.,
and MALYARENKO, I. S., Sverdlovsk Institute of Industrial ~~hygiene and~~
Occupational Diseases, and Karaganda Institute of Industrial Hygiene and
Occupational Diseases and Ural Polytechnic Institute, Sverdlovsk

"Experimental Study of the Protective Effect of Polyvinylpyridine-N-Oxide
Against Silicosis"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Abstract: A polyvinylpyridine-N-oxide polymer with a molecular weight of 117,500 was prepared, and its activity and effectiveness against silicosis were compared with those of a previously prepared polymer of molecular weight 40,000 and the P-204 polymer (Bayer, West Germany). It was found that the new polymer was more effective than either of the other two polymers against intratracheal dust (cristobalite) introduced in rats for a period of 3-1/2 months. Development of silicosis was sharply reduced, as indicated by the decrease in size and number of cellular-dust lumps and the reduction in proliferating reactions, and sclerotic shifts.

USSR

KATSNEL'SON, B. A., et al, Gigiiena i Sanitariya, No 10, Oct 1970, pp 20-23

Dust elimination from the lungs and inhibition of the silicotic fibrogenesis process are associated with an increase in the resistance of the alveolar coniophages to the cytopathic effect of silicon. It was found that this process was accompanied by a decrease in the diffusion of a lysosome hydrolytic enzyme (acid phosphatase) into the cytoplasm of macrophages due to the effect of silicon, a fact which is attributed to the anti-silicosis effect of the new polyvinylpyridine-N-oxide polymer.

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1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SEPARATION OF SODIUM SULFATE FROM CONCENTRATED SULFATE BRINES BY
HEATING -U-
AUTHOR-(05)--BORODULINA, YE.K., GORELOVA, V.A., SPEKTOR, I.E., FURMAN,
A.A., VOROPANOV, V.S.
COUNTRY OF INFO--USSR

B

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 38-40

DATE PUBLISHED-----70

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TOPIC TAGS--CHEMICAL SEPARATION, SODIUM HYDROXIDE, SODIUM CHLORIDE, SODIUM
SULFATE

CONTROL MARKING--NO RESTRICTIONS

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CIRC ACCESSION NO--AP0101697

UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AP0101697

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONCD. SULFATE BRINES FROM ELECTROLYTIC NAOH MANUFG. PLANTS CONTAIN NACL 22.0 TO 2.5, NA SUB2 SO SUB4 6 TO 7, AND NAOH 0.5 TO 1.5PERCENT; AS A RESULT OF EVAPN. OF 5 TO 7.5PERCENT OF THE H SUB2 O (BY HEATING TO 100PERCENT) UP TO 40PERCENT OF THE NA SUB2 SO SUB4 IS PPTD. AS A SOLID (CONTG. NO NACL). EVAPN. OF A LARGER FRACTION OF THE H SUB2 O RESULTS IN A HIGHER DEGREE OF EXTN. OF SUBSTANTIAL AMTS. OF NACL. EVAPN. OF

A1234

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EFFECT OF HIGH CONCENTRATIONS OF ROGOR ON THE WATER SYSTEM OF APPLE
TREES -U-
AUTHOR--(02)--BURGDULINA, F.Z., BERNATSKAYA, M.L.

COUNTRY OF INFO--USSR

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SOURCE--Khim. Sel. Khoz. 1970, 8(1), 22-4

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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES. AGRICULTURE

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DOCUMENT CLASS--UNCLASSIFIED

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